



HOW TO BUILD A RAIN GARDEN

BRING BEAUTY TO YOUR YARD & REDUCE STORMWATER RUNOFF

Rain gardens are shallow depressions filled with native plants designed to catch and absorb storm-water runoff while bringing a touch of nature to your yard or business.

But they do more than preserve the environment:

They also enhance it by using native plantings to attract birds and insects, including pollinators. Water caught in a rain garden either infiltrates into the ground, is taken up by plant roots or evaporates into the air. Stormwater runoff can negatively impact our waterways by increasing erosion and contributing to harmful pollutants picked up from yards, streets and parking lots. This runoff is often channeled into storm drains and eventually finds its way to area creeks, rivers and lakes and can even contribute to sewer overflows and basement backups. Keeping excess rainwater out of our sewer system also helps reduce maintenance costs by removing natural water that does not need to be treated by the City's wastewater treatment plants.



DESIGN YOUR RAIN GARDEN

1. **Determine the size** of your rain garden by estimating your roof area or driveway square footage. The garden should be about one-third the size of the area providing runoff.
2. **Choose a spot** at least 10 feet away from your foundation and downhill from your home, downspout, sump pump outlets or other runoff source. Perform a **percolation test** by digging a hole 12 inches deep, filling it with water and allowing it to drain all the way. Then, fill it with water a second time. If, on the second filling, the water drains at least 1/2 inch within the first hour, your soil has adequate drainage for a rain garden. If not, see back for instructions on fixing your soil.
3. **Dig** a shallow, flat-bottomed hole with gradually sloping sides anywhere from 6 to 12 inches deep. Have a spot located in your landscape for excavated materials, or build a berm on the downhill side of your rain garden.
4. **Test the overflow pattern.** Fill the excavated area with water, and observe the overflow to ensure it flows away from buildings. Take this time to observe drainage and make soil adjustments as needed.
5. **Direct the runoff** into your rain garden by digging a shallow channel or using drainpipe.

Before you dig, call **1-800-DIG-RITE** to identify underground utilities



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FIX YOUR SOIL

If the composition of your soil does not allow for proper drainage, you might need to fix it. Dig to twice the desired depth, then fill the bottom half with the materials below. You can mix these right in your garden.

50% + 25% + 25%

SAND TOPSOIL FINISHED
COMPOST

WHAT ABOUT MOSQUITOES?

Stormwater runoff entering your rain garden should disappear within 24-48* hours of a rain event. Mosquitoes need at least a week of standing water to complete their life cycles; a poorly maintained bird bath or rain gutter is a more likely breeding ground.

**If your rain garden does not drain in 48 hours, see "Fix Your Soil" above.*

FOR MORE INFORMATION

To learn more about Missouri rain gardens and how to select your native plantings, visit:

missouribotanicalgarden.org

gardeninghelp.org

grownative.org

DESIGN YOUR RAIN GARDEN (CONTINUED)

- 6. Choose your plants.** Native plants are a good choice for rain gardens because they are adapted to our local growing conditions, have massive root systems that keep soil from eroding, and help water soak into the ground to keep the plants alive during droughts.
- 7. Plant!** Check each plant's packaging for recommended spacing, then place and check your arrangement prior to digging holes. Evaluate the texture and color of adjacent plants, and make any design adjustments. Add a 3-inch layer of mulch. If you add mulch before planting, simply move it aside when digging holes. After planting, place mulch loosely around plants. Untreated shredded hardwood mulch is best, as it is less likely to float out of your garden, but any mulch will work.

MAINTAIN YOUR RAIN GARDEN

- Water your newly planted rain garden during its first growing season.
- Remove weeds regularly.
- Remove any unappealing dead stems or seed heads.
- Evaluate your rain garden each year. Fill any holes with the other appropriate native plant species.
- To keep your garden looking neat, maintain its boundary by clipping and mowing. Consider edging the rain garden with natural stone on the downhill side. Avoid using a raised edge treatment on the side where water flows into the rain garden.
- In early spring, cut back last year's growth from grasses and perennials. Leave the plants standing throughout the winter for visual interest; many native grasses look attractive during this time of year.
- Do not apply lawn fertilizers too close to your rain garden. When native plants are fertilized, especially with nitrogen, they tend to grow too tall to hold themselves upright. Additionally, fertilizing can stimulate weed growth and create competition for the native plants.



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